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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/557,820 | 11/23/2005 | Kwan Young Han | 074998-0012 | 2544 |
| 20277 7590 09/14/2007 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096 | | | EXAMINER TRAN, TONY | |
| | | | ART UNIT 2818 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/557,820 | HAN ET AL. | |
| | Examiner | Art Unit | |
| | Tony Tran | 2818 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>07/26/07</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

This is responsive to Amendment filed on 07/26/07. In light of the amendment, claim 13 has been amended.

Response to Arguments

1. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

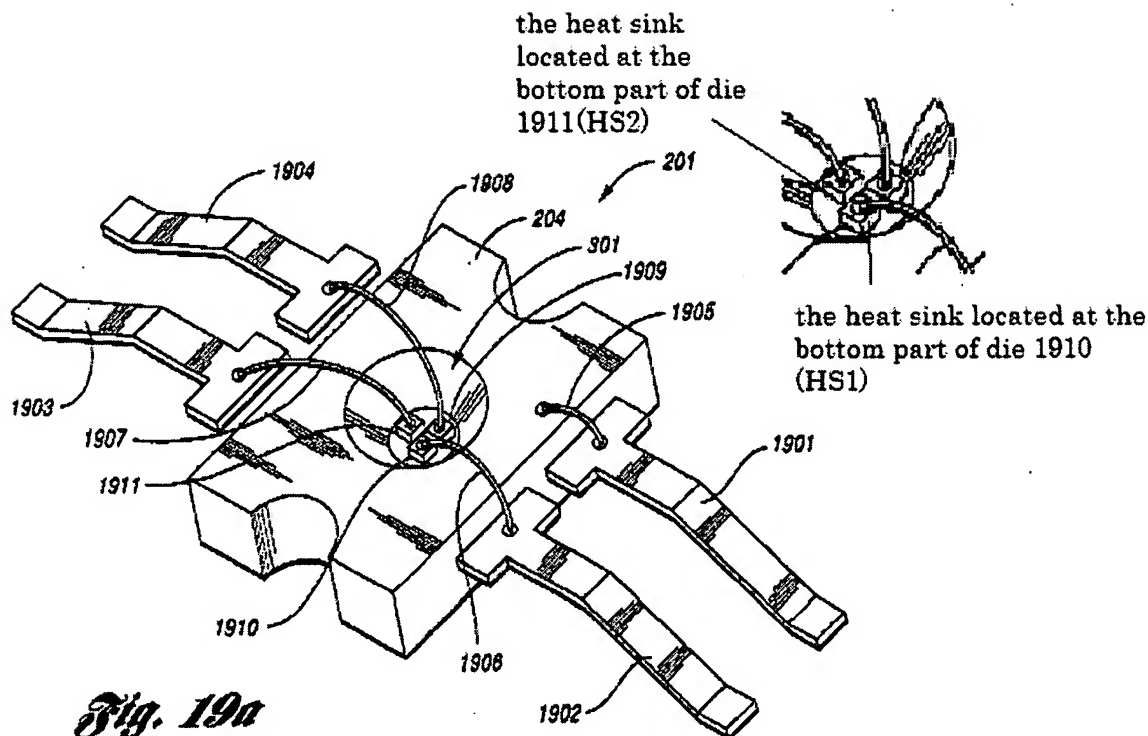
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this office action:

A person shall be entitled to a patent unless —

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

Claims 1-6, 8-10 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by

Roberts et al. (Patent No.: US 6335548 B1) (hereinafter Roberts) filed in IDS on 07/26/07.



Regarding Claim 1, Roberts, one embodiment, FIGS. 19A-19B teaches a high power light emitting diode package comprising:

a main body (204, col. 29, lines 61-65);

at least two lead terminals (1902 & 1903, col. 30, lines 5-10) fixed to the main body (204); and

at least two heat sinks (HS1 & HS2, FIG. 19a as shown above, note that HS1 and HS2 are sitting on top of heat extraction 204 which are conducting heat to 204 they are considering as the heat sinks) of electrically and thermally conductive materials, the heat sinks being separated from each other and fixed to the main body (204).

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Regarding Claims 2-3, Roberts, one embodiment, FIGS. 19A-19B further teaches the package of claim 1, wherein each of the at least two heat sinks (HS1 & HS2) has a reflective surface (301, col. 30, lines 9-11 & col. 12, lines 10-15) extended from an upper surface thereof (claim 2).

wherein the at least two heat sinks are a pair (HS1 & HS2, FIG. 19a as shown above) (claim 3).

Regarding Claim 4, Roberts, one embodiment, FIGS. 19A-19B further teaches the package of claim 3, further comprising: at least one light emitting diode die (top part of die 1910 or 1911) mounted on upper surfaces of the at least two heat sinks (HS1 & HS2), the die (1910 & 1911) being directly and electrically connected to the heat sinks (HS1 & HS2) through a surface of the die (top surface of 1910 & 1911).

Regarding Claim 5, Roberts, one embodiment, FIGS. 19A-19B further teaches the package of claim 4, further comprising: bonding wires (1906 & 1907) electrically connecting the at least two lead terminals (1902 & 1903), the at least two heat sinks (HS1 & HS2) and the at least one light emitting diode die (1910 & 1911).

Regarding Claim 6, Roberts, one embodiment, FIGS. 19A-19B further teaches package of claim 4, further comprising: a lens (401, col. 30, lines 9-10) attached to the main body (204), the lens (401) enclosing the at least one light emitting diode die (1910 & 1911).

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Regarding Claim 8, Roberts et al., one embodiment, FIGS. 19A-B further teaches the package of claim 4, further comprising: a fluorescent material converting the wavelength of light emitted from the at least one light emitting diode die (fluorescent dyes....within the encapsulant....re-emit it at lower wavelength, col. 24, lines 39-45, note that the encapsulant is the 203, FIG. 9B, col. 30, lines 8-10)

Regarding Claim 9, Roberts et al., one embodiment, FIGS. 19A-B further teaches the package of claim 1, further comprising:

light emitting diode dies (top surface of 1910 & 1911) mounted on the respective heat sinks (HS1 & HS2), the light emitting diode dies emitting different wavelengths of light (the three dies 1909, 1910 and 1911 emit at red, blue, and green wavelengths respectively, col. 30, lines 13-14).

Regarding Claim 10, Roberts et al., one embodiment, FIGS. 19A-B further teaches the package of claim 9, wherein the at least two lead terminals (1902 & 1903) include:

lead terminals (1902 & 1903) electrically connected to the at least two heat sinks (HS1 & HS2) respectively; and a common lead terminal electrically connected to all of the at least two heat sinks (the base (cathode) of the dies, the cup 301 and 204, col. 29, lines 61-67 and col. 30, lines 1-11, FIG. 9a).

Regarding Claim 12, Roberts et al., one embodiment, FIGS. 19A-B further teaches the package of claim 9, wherein the light emitting diode dies include light emitting diode

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dies (1909, 1910, and 1911) emitting a first wavelength of light (red), a second wavelength of light (blue) and a third wavelength of light (green), respectively.

Regarding Claim 13, Roberts et al., one embodiment, FIGS. 19A-B further teaches wherein the first wavelength, the second wavelength and the third wavelength are red wavelength, green wavelength and blue wavelength, respectively (the three dies 1909, 1910 and 1911 emit at red, blue, and green wavelengths respectively, col. 30, lines 13-14).

Claim Rejections - 35 USC § 103

35 U.S.C. 103 Conditions for patentability; non-obvious subject matter.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al., one embodiment, FIGS. 19A-B (Patent No.: US 6335548 B1) (hereinafter Roberts) in view of Roberts et al., another embodiment, FIGS. 1-15 filed in IDS on 7/26/07).

Regarding Claim 7, Roberts et al., one embodiment, FIGS. 19A-B does disclose all the limitation of claim 6; and wherein the lens (401) includes at least one light emitting diode die (1910).

However, Roberts et al., one embodiment, FIGS. 19A-B does not disclose includes an optically transparent material which is directly contacted with the at least one light emitting diode die.

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Nevertheless, Roberts et al., another embodiment, FIGS. 1-15 does teach includes an optically transparent material (501, FIG. 5, col. 17, lines 48-50) which is directly contacted with the at least one light emitting diode die (1910).

Therefore, since both Roberts et al., one embodiment, FIGS. 19A-B and Roberts et al., another embodiment, FIGS. 1-15 teach on the same light emitting device. It would have been obvious to one ordinary skill in the art at the time the invention was made to further including includes an optically transparent material which is directly contacted with the at least one light emitting diode die in Roberts et al., one embodiment, FIGS. 19A-B, as taught by Roberts et al., another embodiment, FIGS. 1-15. One would have been motivate to make such a change to improve the electrical characteristic and performance of the light emitting device.

Claim 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al., one embodiment, FIGS. 19A-B (Patent No.: US 6335548 B1) (hereinafter Roberts) in view of Pederson (Pub. No.: US 2005/0001562 A1).

Regarding **Claim 11 and 14**, Roberts et al., one embodiment, FIGS. 19A-B does disclose all the limitation of claims 1, 9 and 10.

However, Roberts et al., one embodiment, FIGS. 19A-B does not disclose the limitation as claim 11 and 14.

Nevertheless, Pederson does teach an additional heat sink (346, FIG. 18, [0118]); and a zener diode (614, FIG. 24, [0144]) mounted on the additional heat sink (note that the zener diode is mounted on one of the opening 344, FIG. 18, [0118]), and

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a controller (50, FIG. 26, [0154]) for controlling the electric power supplied to the light emitting diode package ([0153]), wherein the controller controls the amount of the current supplied to the respective heat sinks (microcontroller 900 switches to decrease the current, [0153]).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to include all the limitation in claims 11 and 14, as taught by Pederson. One would have been motivate to make such a change to optimize the performance of the LED (Pederson, [0003]), and inclusion of such would improve the photometric efficiency (Carey et al., col. 1, lines 9-15).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Tran whose telephone number is 571 270-1749. The examiner can normally be reached on Monday through Friday: 7:30AM-5:00PM (E.S.T.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on (571) 272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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TTRAN



Andy Hays
Primary Examiner